Grindmaster Model FDD2500

Service Manual

for

Model FDD2500

Table of Contents

Warning Labels 2
Installation 3
Programming 4
Start-up & Adjustments 7
Cleaning 8
Shipping Preparation 10
Replacing Controller11
Replacing Components11
Product Out Adjustment11
Troubleshooting Guide12
Assembly Drawings14
Wiring Diagrams28

Prior authorization must be obtained from Grindmaster Corporation for all warranty claims.



Model FDD2500-1-M-B Model FDD2500-3-M-B Model FDD2500-1-3A-B Model FDD2500-3-3A-B

Grindmaster Corporation

4003 Collins Lane Louisville, KY 40245 USA (502) 425-4776 (800) 695-4500 (USA & Canada only) FAX: (502) 425-4664 www.grindmaster.com



Warning Labels

The following warning labels were on your dispenser when it was shipped from the factory. They should remain on your dispenser in good, readable condition at all times. If one of your labels is missing or damaged, order a replacement label immediately.

Part #71582

Located on machine cover and spout mounting bracket.



Part #63370

For FDD2500- ★-M-B models only Located on front splash panel

RELEASE HANDLE WHEN 2/3 FULL. THIS PRODUCES A FULL CUP AND PREVENTS AN OVERFLOW.

Part #63371

Located next to center spout



Part #62981

Located on front splash panel



Part #63448

Located on tank drain hose



VERY HOT WATER MAY CAUSE BURNS

IMPORTANT

- YOU MUST HAVE TWO (2) FIVE (5) GALLON (19 LITER) OR ONE (1) 8 GALLON (30 LITER) HEAT RESISTANT CONTAINER(S) TO CATCH HOT WATER.
- TO EMPTY HOT WATER FROM TANK, REMOVE CLAMP, PINCH THE TUBE AND UNPLUG HOSE. PINCH TUBE TO STOP WATER WHEN MOVING TO THE SECOND CONTAINER.
- · REPLACE PLUG AND CLAMP PRIOR TO REFILLING TANK.

▲ ADVERTENCIA AGUA MUY CALIENTE PUEDE CAUSAR QUEMADURAS

- IMPORTANTE

 DEBE TENER (2) CONTENEDORES DE (5) GALONES (18 LITROS) 0 (1) CONTENEDOR DE 8 GALONES (30 LITROS)
 PARA VACIAR EL AGUA CALIENTE. NOTE QUE LOS CONTENEDORES DEBEN SER RESISTENTES AL CALOR.
- PARA VACIAR EL AGUA CALIENTE DEL TANQUE REMUEVA LA ABRAZADERA, PRESIONE EL TUBO Y DESCONECTE LA MANGUERA.
- REEMPLACE EL CONECTOR Y LA ABRAZADERA ANTES DE RELLENAR EL TANQUE

▲ AVERTISSEMENT L'EAU TRES CHAUDE PEUT CAUSER DES BRULURES

- IMPORTANT

 IL HAUT DEUX (2) RECIPIENTS RESISTANT A LA CHARLIN D'UNE CAPACITE DE 5 GALLONS (19 LITRE) DU UN RECIPIENT RESISTANT A LA CHARLIN DE SOLICIONS (20 LITRES) POUN RECUBLIUÑ E FAU CHARLIN POUN VURS LE RESEMONE, BULEFOR LE COULEN DE SERRALE, FINCER I ET UDE ET DESPANCHEN ET L'UYAU.

 **PUNCER LE TURP COUNT AMPETER L'ECOULENT DE SERRALE, FINCER LE TURP LA SECRION RECIPIENT.

• REMETTRE LE BOUCHON ET LE COLLIER DE SERRAGE AVANT DE REMPLIR LE RESERVOIR.

Installation

WATER INLET CONNECTION

The National Sanitation Foundation requires the following for an NSF approved water hook-up:

- 1. A quick disconnect water connection or enough coiled tubing so that the machine can be moved for cleaning underneath.
- 2. An approved backflow prevention device, such as a double check valve to be installed between the machine and water supply. On units plumbed to permanent water line, installation of a water filter/softener system is recommended to prevent lime and scale build up in the machine. On units pumping from remote water container, filtered water is recommended to prevent lime and scale buildup in the machine.
- 3. Water pipe connections and fixtures directly connected to potable water supply shall be sized, installed and maintained in accordance with Federal. State, and Local codes.

WATER HOOK-UP

- 1. Install the 4" legs and hand tighten. Install the plastic drain tray onto the drain tray bracket and install drain grid. (Note: The drain tray is provided with a drill-out port to allow for plumbing to a drain.)
- 2. Remove front splash panel for access to water hook-up. (see Figure 1)
- 3. Ensure the 3/8" water supply hose has sufficient length to allow the machine to be moved for cleaning or service. Supplying hot water to the machine will greatly increase the capacity of the machine. The use of copper tubing is required to prevent rupture when using a hot water supply. A maximum inlet water temperature of 160°F (71°C) is recommended.
- 4. Flush the water line to purge any debris from the supply line.
- 5. Connect a 3/8" water line to the 3/8" male flare connection.
- 6. Ensure water supply to machine is within 20 to 100psi. Install a pressure regulator if pressure is too high.
- 7. Turn on water supply and check for leaks.

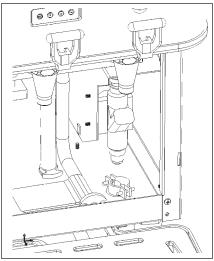


Figure 1

↑ WARNING: ELECTRIC SHOCK HAZARD

Only qualified service personnel should perform installation of this appliance. Improper installation could result in serious injury or death.

⚠ WARNING: ELECTRIC SHOCK HAZARD

Never use the ground conductor as a neutral conductor. Serious injury or death could occur in the event of a fault condition.

⚠ WARNING: ELECTRIC SHOCK HAZARD

Always disconnect power to the machine before servicing or cleaning. Risk of electric shock is present which can cause serious injury or death.

Installation (cont.)

ELECTRICAL HOOK-UP

Ensure water connection is made to machine before proceeding.

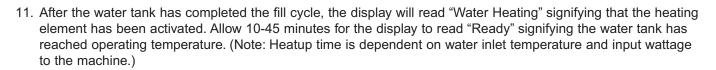
The electrical ratings for your dispenser are located on the serial plate on the outside cabinet and inside door. For configuration of three heater models to optional wattages, refer to page 31 of service manual.

- 1. For cord connected models, plug the power cord into an appropriate grounded and dedicated electrical outlet. Go to step 8.
- 2. For hard-wired models not supplied with an electrical cord, the dispenser should be connected to a dedicated circuit with a fused disconnect switch or a circuit breaker near the dispenser.
- 3. Strain relief is supplied under the machine chassis for power entry. (see Figure 2)
 - · Electrical connections and wiring materials must conform to local codes and/or be in compliance with the National Electric Code
 - Use only copper conductors
- 4. Note: Wiring diagram is on inside of left side panel.
- 5. Connect the power supply conductors, neutral (optional) and ground wire to the appropriate positions on the terminal block. The ground lug is separate from the terminal block. Note: machine is equipped with a stepdown transformer to provide the necessary 120 volt power supply for the control circuits. Neutral will not be used.
- 6. Remove lid and left side panel. (see Figure 3)



- "H2" for 208V supply
- "H3" for 240V supply
- 7. Install the front splash panel.
- 8. Install the plastic drain tray into the drain tray rails then place drain grid onto drain tray.
- 9. Flip power supply to machine "ON" at the branch supply disconnect.
- 10. Flip power switch to the "ON" position and allow the water tank to fill. The machine will make a subtle hissing sound while filling. Allow 3-4 minutes for fill time depending on water pressure.

Attention: This machine employs an interlock switch to disable the dispense and fill circuits when the front door is open. Ensure the front door is closed while installing or operating the machine. A watchdog circuit also monitors the water level in the tank and will disable the machine if the water level in the tank is not normal within (5) minutes of fill time. The machine will require power to be reset to clear the watchdog timeout.



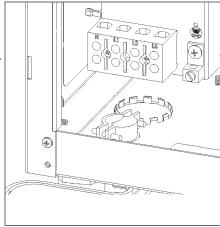


Figure 2

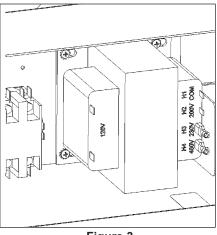
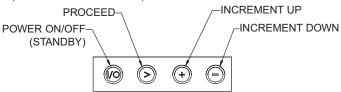


Figure 3

Programming Machine from Touchpads

Tools Required: None

MACHINE PROGRAMMING: The machine operating parameters can be changed from the touchpad and LCD display without opening up the machine. (See illustration below).



To enter **Programming Mode:**

Press and hold (>) and (+) at the same time for approximately 5 seconds.

Tip: Use the eraser end of two pencils to press the buttons if you are having difficulty entering programming mode.

To **Exit** programming mode at anytime:

- Wait 20 seconds without pressing a button.
- The display will prompt "Exit?"
- Press (+) or (-) to toggle between YES and NO.
- After selecting YES, you MUST press (>) to SAVE changes, or wait for ready message and machine will exit without saving.

Tip: To verify changes successfully save, re-enter programming mode and check settings.

1) Press (>) to select Language. (1A)

Press (+) to choose English, Spanish, German, or French.

2) Press (>) to set the **Time** of day on the machine.

Press (+) or (-) to change the time.

- 3) If password is activated, enter password now.
 - a) Press (+) to enter first number.
 - b) Press (>), then (+) to enter second number.
 - c) Press (>), then (+) to enter third number.

NOTE: The default password is "111". If the password has been changed and forgotten, press "I/O" and "+" at the same time to proceed.

4) Press (>) to change Password settings. (2B)

Press (+) or (-) to toggle between ON (enable password) and OFF (disable password).

If ON is selected, press (>) to change password.

- a) Press (>) to enter new password. (following steps 3 a, b, c)
- b) Press (>) to confirm new password. (following steps 3 a, b, c)
- 5) Press (>) to program **Dispense Settings**. (to change **Portion Sizes**) (2E) (For FDD2500-**-3A models only)
 - a) Press (+) for message "Select Dispense Button". (5A)
 - b) Press the dispense button for the dispense head you wish to adjust the settings. LCD will display L, M, or R for left, middle, or right dispense head to acknowledge your selection.
 - c) Once the dispense head is selected, press (+) or (-) to change the amount of time (portion size) for the beverage being dispensed.
- 6) Press (>) to change Whipper Settings. (5A1)
 - a) Press the dispense button for the dispense head you wish to adjust the settings. LCD will display L, M, or R for left, middle, or right dispense head to acknowledge your selection.
 - b) Once the dispense head is selected, press (+) or (-) to toggle between ON (turn whipper ON) and OFF (turn whipper OFF).
- 7) Press (>) to return to **Dispense Settings. (2E)**

Repeat steps 6 & 7 for remaining heads.

- 8) Press (>) to modify **Drink Strength. (7A)**
 - a) Press (>) to Select a Dispense Button. (7B)
 - b) Press the dispense button for the dispense head that you want to change the drink strength for.
 - c) Press (+) or (-) to modify the auger speed which changes the drink strength (0-100% of maximum auger speed in 1% increments).

Note: A faster speed will result in a stronger drink and a slower speed will result in a weaker drink.

Programming Machine from Touchpads (cont.)

- 9) Press (>) to modify Auger Delay.
 - a) Press (>) and select dispense button.
 - b) Press the dispense button for the dispense head that you want to change the auger ON delay time.
 - c) Press (+) or (-) to modify the time in tenths of a second.
- 10) Press (>) to modify Auger Off Delay.
 - a) Press the dispense button for the dispense head that you want to change the auger OFF delay time.
 - b) Press (+) or (-) to modify the time in tenths of a second.
- 11) Press (>) to change **Heater** settings. **(8A)**

Press (+) or (-) to toggle between ON (water tank heater ON) and OFF (water tank heater OFF).

12) Press (>) to modify Water Tank Temperature. (7A)

Press (+) or (-) to increase or decrease water tank temperature.

13) Press (>) to modify Low Temp/No Brew settings. (7B)

Press (+) or (-) to toggle between ON (will not allow drinks to dispense if water temperature is below programmed temperature) and OFF.

- a) If turned ON press (>) to modify Minimum Dispensing Temp.
- b) Press (+) or (-) to increase or decrease Minimum Dispensing Temp.
- 14) Press (>) to change Sleep Mode settings. (8A)

Press (+) or (-) to toggle between OFF and ON (forces the water tank temperature to a programmed temperature after a programmed time of inactivity – used for energy savings).

- a) If turned ON, press (>) to change Sleep Mode Settings.
- b) Press (+) or (-) to increase or decrease the amount of time the unit is inactive before going into sleep mode.
- c) Press (>) to change sleep mode water tank temperature setting.
- d) Press (+) or (-) to increase or decrease the water tank temperature during sleep mode.
- 15) Press (>) to view Manual Dispense mode. (9A)

(Models with manual Free-Flow Tomlinson handles cannot be changed to portion control.)

- 16) Press (>) for Sales Mode. (14A) (This option for future use. "Free" is currently the default setting.)
- 17) Press (>) to retrieve Sales Data. (15A)
- 18) Press (>) to view **Total Dispense** data (number of drinks dispensed per head). **(15B)**

Press the dispense buttons that you want to retrieve information about.

After viewing each head's data, proceed to next step.

19) Press (>) to view Total Brews data. (15E)

LCD will display total number of drinks dispensed by the unit.

20) Press (>) for Clear Data options. (16A)

Press (+) or (-) to toggle between YES (resets sales data counter to "0") and NO.

Important: After selecting YES and then pressing (>) all data will be cleared immediately.

21) Press (>) to view **Dispenser Type. (17A)**

LCD will display type of dispenser.

22) Press (>) to display Date Code information. (18A)

LCD will display manufacture date.

23) Press (>) to display **Software Version** on controller. **(19A)**

Displays current software version stored in controller memory.

24) Press (>) to Retrieve Error Codes. (20A)

Press (+) or (-) to toggle through and review all error codes. The LCD will display the number of times each error code has occurred. Error Codes:

SC1: No Water Pressure

SC2: Reset Power (Error has occurred that requires power to be reset).

SC3: Low Water Level (Inlet valve ON for more than 5 minutes.)

Page 6 Model FDD2500

Programming Machine from Touchpads (cont.)

24) Press (>) to Retrieve Error Codes. (20A) (cont.)

SC4: Thermistor Failure (Temperature is out of range – less than 32°F or greater than 210°F.)

SC6: Check Heating (Tank is too hot.)

SC8: Overcooling

SC9: Overflow (Water level safety probe is tripped.)

SC10: Adjust Temperature (Temperature adjusted from touchpad.)

25) Press (>) for Clear Error Code options. (20B)

Press (+) or (-) to toggle between YES (clears all stored error codes from memory) and NO.

Important: After selecting YES and then pressing (>) all data will be cleared immediately.

26) Press (>) for **EXIT** option

Press (+) or (-) to toggle between YES and NO.

Important: After selecting YES, you MUST press (>) to SAVE changes, or wait for READY message and machine will exit <u>without saving</u>.

⚠ **WARNING**: Disconnect power before servicing machine.

FILLING PRODUCT HOPPERS (see Figure 4)

- 1) Open door.
- 2) Lift hinged top.
- 3) Remove hopper lid.
- 4) Carefully pour product into hopper.
- 5) Replace hopper lid.
- 6) Lower hinged top.
- 7) Close door.

THERMOSTAT ADJUSTMENT

(See machine programming procedure: Water tank temperature)

Tools required: None

NOTE: The thermostat range is approximately 40°F to 205°F (4°C to 96°C). The water tank temperature is factory set at 190°F (87°C), making the beverage temperature slightly lower than 190°F (87°C).

HOW TO DISPENSE A DRINK

Machine is equipped to dispense into cups, decanters, 1.3 L servers, 2.2 L airpots or hose connected to 5 gal. containers. **WARNING**: Server must rest flat on tray with a 1/4" (6 mm) clearance between cup and spout. Contents can cause severe burns if handled improperly.

For Manual Machines FDD2500-1-M-B and FDD2500-3-M-B:

- 1) Place a server under the selected drink dispense nozzle.
- 2) Pull dispense handle until cup is 2/3 full, then release handle.

For Automatic Machines FDD2500-1-3A-B and FDD2500-3-3A-B:

- 1) Place a server under the selected drink dispense nozzle.
- 2) Press and release desired dispense button.

NOTE: To stop a dispense, simply press-and-release any button.

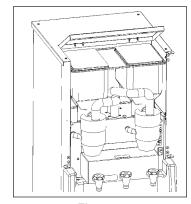


Figure 4

MARNING: Disconnect power before servicing machine.

Cleaning

Daily Cleaning

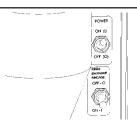
CAUTION: When cleaning the unit, do not use cleansers, liquid bleach, powders or any other substance that contains chlorine. These products promote corrosion of stainless steel and plastic parts. Use of these products will void the warranty.

⚠ WARNING: Do not use a water jet to clean machine. Risk of electric shock.

Empty drip pan as needed and wash daily in a dish detergent.

Wipe down all surfaces of the dispense spouts, product storage cabinet, splash panel and drip tray areas with a clean soft cloth using a mixture of one ounce Ivory liquid detergent (or equivalent) to one gallon of fresh water. Follow by wiping down all surfaces of the dispense spouts, product storage cabinet, splash panel and drip tray areas with a clean soft cloth moistened with fresh water and allow to air dry.

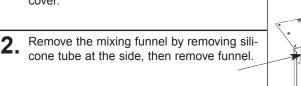
2. Rinse out the funnel by placing the rinse switch (located to the right of the dispensing valves when the door is open) in the ON position. Dispense one to two cupfuls until the water is clear. Short bursts of dispensing may also help clean the chambers. When complete, return the rinse switch to the OFF position.



Weekly Cleaning

Cleaning the Funnel – Disassembly

Open the door and remove the large tube from the funnel cover, then remove the cover.



Cleaning the Funnel – Reassembly

Place funnel into position, then connect hoses.

2. Place funnel cover on funnel and connect large tube.

3. PARTS IN CONTACT WITH FOOD MUST BE WASHED, RINSED, SANITIZED, AND AIR DRIED.

Page 8 Model FDD2500

Cleaning (cont.)

Weekly Cleaning (cont.) Cleaning Hoppers - Disassembly Cleaning Hoppers - Reassembly **CAUTION:** Do not wash hopper without first IMPORTANT: All components must be completely dry prior disassembling. to reassembly. Open door, disconnect large hose from Place driveshaft bearing inside hopper funnel cover and then lift off funnel with threads going through hole in the rear of the hopper. 2 Lift off ring heater and set aside. Secure the bearing by attaching the palnut to the bearing outside rear hopper opening. Use one hand inside the hopper to push the bearing outward while turning the 3. Lift open lid and remove coffee spill palnut clockwise. Remove the hopper from the cabinet. Install the auger spring driveshaft Way way AUGER SPRING DRIVESHAFT and the auger spring by inserting the flat end of the spring into the 5. Remove the hopper Insert assembly into lower front hopper cover and empty opening, making sure the threaded end of hopper contents. the auger spring driveshaft completely inserts into the plastic driveshaft bearing in the rear of the hopper. The driveshaft bearing threads should be accessible Remove the auger pinwheel by pulling it Place the washer over the driveshaft forward while stretching out the sides of bearing threads followed by securing the drivelink onto the driveshaft bearing the hopper. by turning counterclockwise. Secure the auger spring with one hand while attaching the drivelink with the other. Remove the drivelink and washer at Replace the auger pinwheel making sure the rear of the hopper by holding the the pins are securely positioned inside the auger spring with one hand at the front locator holes in the hopper. of the hopper while turning the drivelink clockwise with the other hand. Remove the auger spring and auger spring out AUGER SMALL AUGER AUGER SMALL AUG 8. Remove the auger Carefully fill the hopper with product and replace ing of the hopper. the cover. 9. Remove the palnut at the Reinstall hopper into the rear of the hopper by turning machine, making sure it is it counterclockwise then remove properly aligned. the driveshaft bearing from the Driveshaft inside of the hopper. All parts in contact with food must be washed, rinsed, Install ring heater to front spout. sanitized, and air dried. Open lid and install coffee 10. spill pan. Install funnel cover with large tube attached.

Prepare for Shipment

Important: Always completely empty water tank and **PRODUCT HOPPERS** prior to shipping unit. (See Draining the Tank and Cleaning the Hoppers section).

NEVER SHIP UNIT WITH PRODUCT IN HOPPER OR WATER IN TANK – THIS WILL CAUSE IRREPARABLE DAMAGE.

Draining the Tank

Always empty the tank before shipping.

MARNING: Draining of the tank should be performed by a qualified service technician. The tank contains 7.5 gallons (28.4L) of very hot water. May cause severe burns.

- Prepare a heat resistant container to drain 7.5 gallons (28.4L) of hot water from the tank into.
- Pinch hose with fingers and remove the hose clamp and plug.



2. Disconnect power to machine.

6. Allow the tank to drain completely.

NOTE: It may be necessary to pinch the hose and stop the water before container is full. Carefully re-install plug, then empty container. Repeat steps 4-6 to completely drain tank.



- 3. Remove the drain tray and front access panel.
- 7. Once the tank is empty, securely replace the plug and clamp on the end of the hose. Reposition the drain hose.



Locate the silicone drain hose. Put the end of the drain hose into the container. Secure the end of the drain hose (i.e. with tape) into the container.



8. Reassemble the front access panel and drain tray.

Page 10 Model FDD2500

⚠ WARNING: Disconnect power before servicing machine.

REPLACING CONTROLLER

Tools Required: Phillips Head Screwdriver

- 1. Remove 4 screws and lift off lid.
- 2. Lift off right side panel.
- 3. Carefully disconnect each wiring connector from controller.

NOTE: Pull only on connectors. Do not pull on wires.

4. Carefully spring-back mounting clips and lift controller out of clips.

NOTE: Do not pull or press on sensitive controller components. Handle controller by touching the edges.

NOTE: Reverse procedure to install controller. Make sure connector ramps and pins are properly aligned before installing connectors.

REPLACING COMPONENTS

Tools Required: Phillips Head Screwdriver

- 1. Remove drain tray.
- 2. Remove 2 screws then remove front panel.
- 3. Remove 4 screws then remove lid.
- 4. Lift off side panels and/or rear panel.
- 5. Replace components as needed.

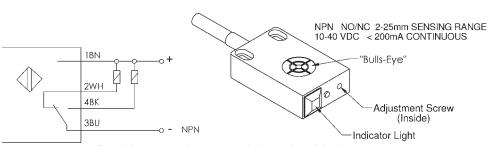
ADJUSTMENT TO "ADD PRODUCT" SENSORS

Capacitive Sensors might need to be adjusted if either situation occurs:

- Hoppers are full and display reads "ADD PRODUCT" when attempting a dispense.
- Hoppers are empty and display does NOT read "ADD PRODUCT" when attempting a dispense.

Adjusting Capacitive Sensors:

- 1. Remove both hoppers.
- 2. Remove Sensor screws and gently pull sensor into cabinet. (see Figure 5)
- 3. Fill one hopper half full with product.
- 4. Hold sensor ("bulls-eye" side) flat against the full half of the hopper. (see Figure 6)
 - * Indicator light should be "ON"
- 5. Slowly move sensor away from the full half of the hopper.
 - * Indicator light should turn "OFF" 1/16" from hopper. (see Figure 7)
 - * If needed, adjust sensor with micro-screwdriver by gently turning adjustment screw. (see Figure 8)
- 6. Hold sensor ("bulls-eye" side) flat against the empty half of the hopper. (see Figure 6)
 - * Indicator light should be "OFF"
 - * If indicator light is "ON", adjust sensor with micro-screwdriver until light turns "OFF".
- 7. Repeat steps 4 through 6 until no adjustment is needed.



Capacitive sensors detect materials due to their dielectric constant. The bigger the material size, the higher the density of material, the higher the likeliness of detecting the material.



Figure 5



Figure 6

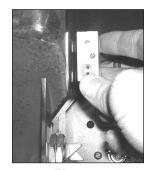


Figure 7



Figure 8

Model FDD2500 Page 1st

Troubleshooting Guide

NOTE: The LCD display provides diagnostic feedback for determining the cause of fault or abnormal conditions. Error codes listed below are stored in the controller memory and can be retrieved through the programming menu. Additional diagnostic LEDs are located on the controller located behind the right side panel. See wiring schematics for LED locations and descriptions. Disconnect power before servicing machine. Failure to do so can result in risk of electric shock.

Problem	Possible Cause	Solution		
LCD display not illumi- nated	Power switch turned "OFF"	Press and release "I/O" button located under the display. Turn power switch "ON".		
	No power supplied to machine Ground Fault Circuit Interrupter (GFCI) has tripped	Ensure machine is plugged in at wall socket. Reset GFCI (if applicable) at power outlet		
	Machine control transformer circuit breaker has tripped	Check if green LED is illuminated on control board located behind right panel. If LED is not illuminated, reset the control transformer circuit breaker located next to the control board. NOTE: An overload condition can reoccur. The overload condition must be diagnosed and		
	Fuse has blown. Faulty wiring connections	corrected. Replace fuse. (see figure on right) Ensure all wiring connectors are plugged into display board and control board correctly. Check if any wires have pulled loose from terminals.		
LCD display shows erro	or code (i.e. SC 1, 2, 3, etc.)			
SC1: No Water Pressure	This feature	is disabled and should not appear.		
SC2: Reset Power	A fault condition described below has occurred requiring power to be reset to machine. 1) Water tank fill circuit has exceeded the maximum run time (5 minutes) 2) A water tank overflow condition has occurred 3) A water tank heating condition has exceeded the water tank temperature set	 For #1-3, turn power switch OFF for 5 seconds, then ON. Call Technical Service for assistance. 		
	point due to: • Welded contacts on heater contactor			
SC3: Low Water Level	Machine is filling the water tank Faulty water inlet valve electrical connections Faulty water inlet valve Insufficient water flow rate to machine (typically during dispensing only).	 Allow machine to fill the water tank Ensure electrical leads are properly made to water inlet valve Check for power across water inlet valve terminals. If power is not detected, replace water inlet valve. Allow water tank to fill. If problem continues, check for restrictions in water line and check for proper water pressure (20-100 psi). 		
SC4: Thermistor Fail	Thermistor is disconnected Thermistor was subjected to sudden temperature change (i.e. filling or draining tank)	Check thermistor wiring connections Allow water temperature to stabilize, reset power to machine.		
	Thermistor resistance valve is out of "valid" range	Reset power first, if continues, check thermistor resistance (consult factory for details), replace if necessary		
SC6: Check Heating	Water temperature has increased above set point due to: • Abnormal increase or decrease in water tank temperature • Welded contacts on heater contactor.	Inlet water temperature must be below temperature set point of water tank Check heater contactor for welded contacts, replace contactor if necessary		
SC9: Overflow condition	Water inlet valve weeping (leaking valve seal) Water inlet valve stuck open Loose water level probe connection	Replace inlet valve Replace inlet valve Check connection to water level probe		
Add Product	Hopper is empty Hopper is disengaged Capacitive sensor needs to be adjusted	 Fill hopper Make sure hopper is properly in place See "Add Product" Adjustment section on page 9. 		

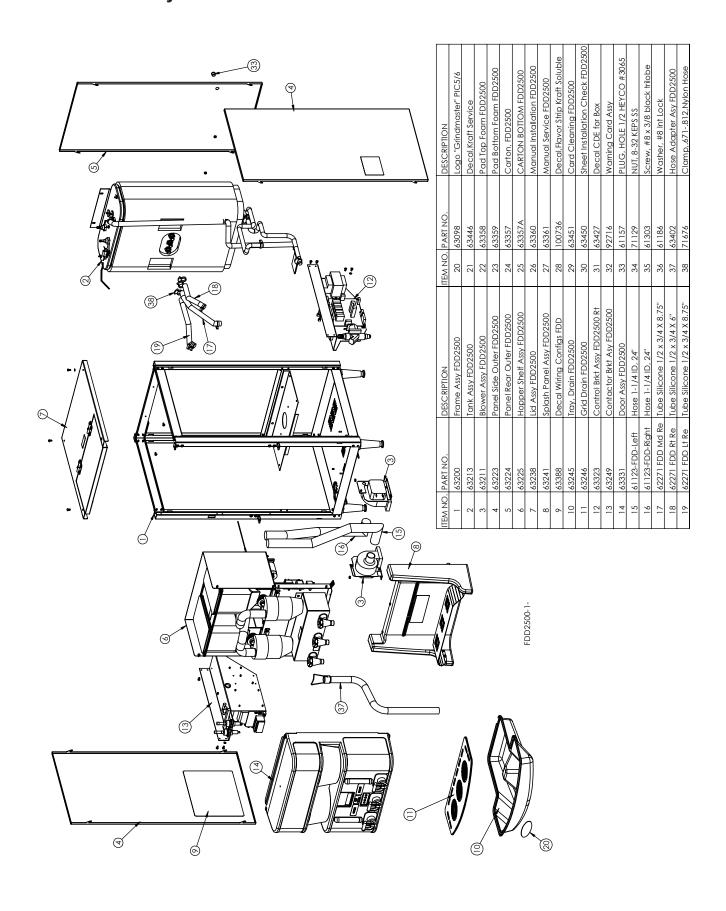
Page 12 Model FDD2500

Troubleshooting Guide (cont.)

Problem Possible Cause		Solution			
LCD display shows "Standby"	Machine is in "STANDBY" mode	Press "I/O" on touchpad to activate machine. (Standby switch acts as a power switch to the control module of the machine; however, the machine is still powered up.)			
No water or product is dispensed • Machine is in "STANDBY" mode • Door is open		 Press "I/O" on touchpad to activate machine. (Standby switch acts as a power switch to the control module of the machine; however, the machine is still powered up.) A door interlock disables the dispense circuit when the door is open. The door interlock switch is located behind the door near the lower hinge and can be overridden by pulling the switch plunger out. The switch will reset when the door is closed. 			
No water is dispensed	Blockage in water delivery circuit	Check for kinked water delivery tubing, lime and scale blockage to and from dump valve.			
Powder not dispensing	Coffee dispense outlet clogged Hopper drive link not engaged with drive motor Low or no product "Drink Strength" setting too low	Clean hoppers according to cleaning procedure Remove and reinstall hopper to engage with drive motor Check product container for product Check "Drink Strength" setting (see programming guide for setting Drink Strength)			
Water overflows mixing funnel	Powder flow rate too fast – too much powder to water ratio can prevent adequate mixing resulting in blockage in mixing funnel Outlet is restricted	Adjust powder flow rate to prevent blockage in mixing funnel Ensure mixing chamber outlets are free of blockage. Follow rinse and cleaning procedure to prevent buildup of product in mixing system.			
Drink is too cold or hot		Check temperature set point and adjust as needed. (Refer to Programming Guide for Thermostat Adjustment section)			
Drink is too weak or strong		Check drink strength to desired taste. (Refer to Programming Guide for Drink Strength Adjustment)			
Water tanks boils water	Water temperature too high for elevation of installation	Adjust water temperature down. Refer to Thermostat Adjustment section.			

If you still need help, call our service department (Monday – Friday, 8 am – 6 pm EST) at (800) 695-4500 (USA and Canada only) or (502) 425-4776 or an authorized service center in your area. Please have the model and serial numbers ready so that accurate information may be given. Prior authorization must be obtained from Grindmaster Corporation's Technical Services Department for all warranty claims.

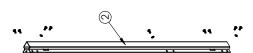
FDD2500 Assembly

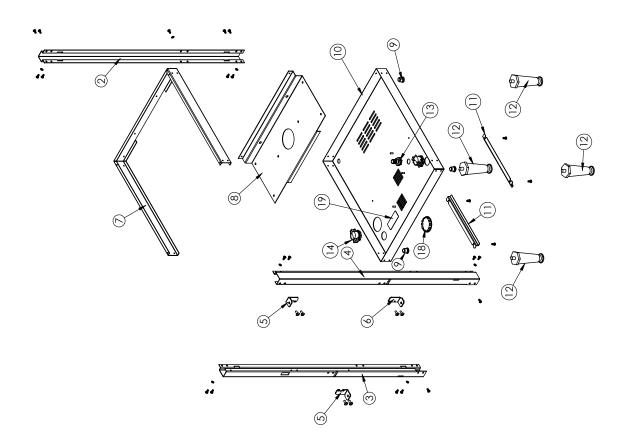


Page 14 Model FDD2500

FDD2500 Frame Assembly

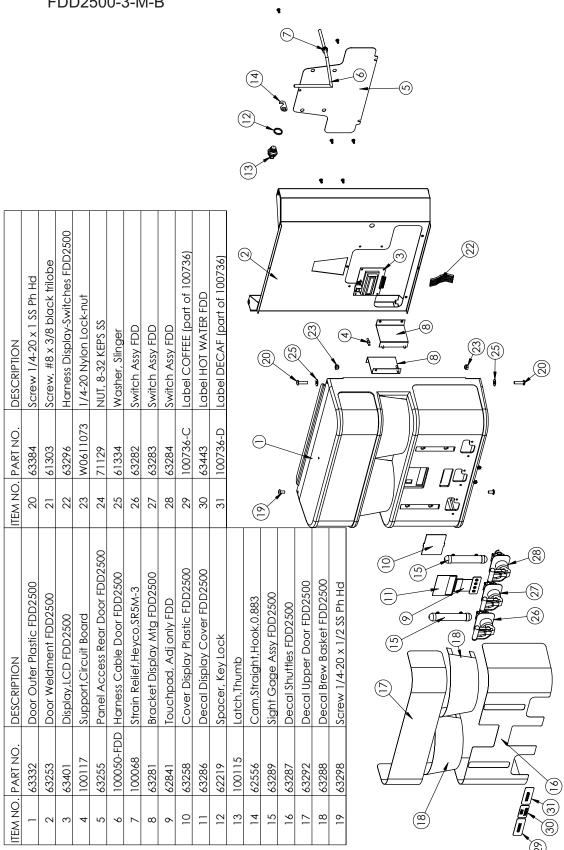






FDD2500 Door Assembly

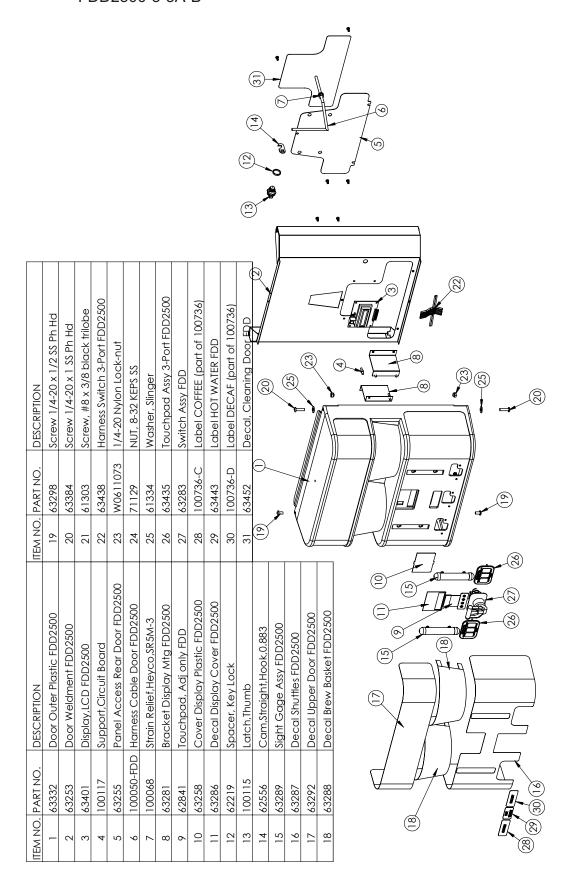
for models FDD2500-1-M-B FDD2500-3-M-B



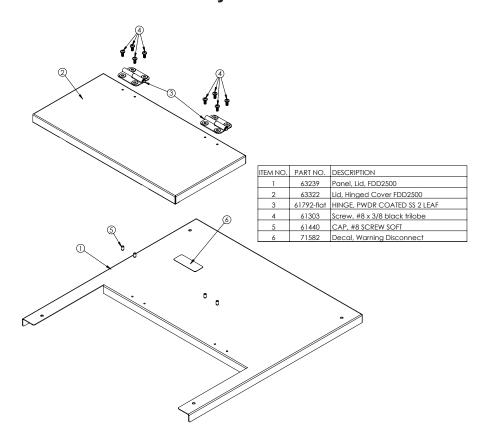
Page 16 Model FDD2500

FDD2500 Door Assembly

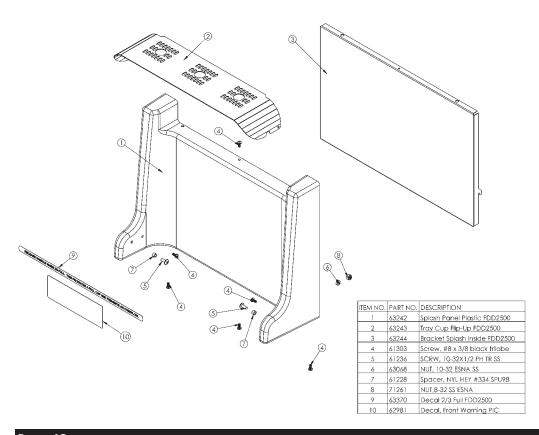
for models FDD2500-1-3A-B FDD2500-3-3A-B



FDD2500 Lid Assembly

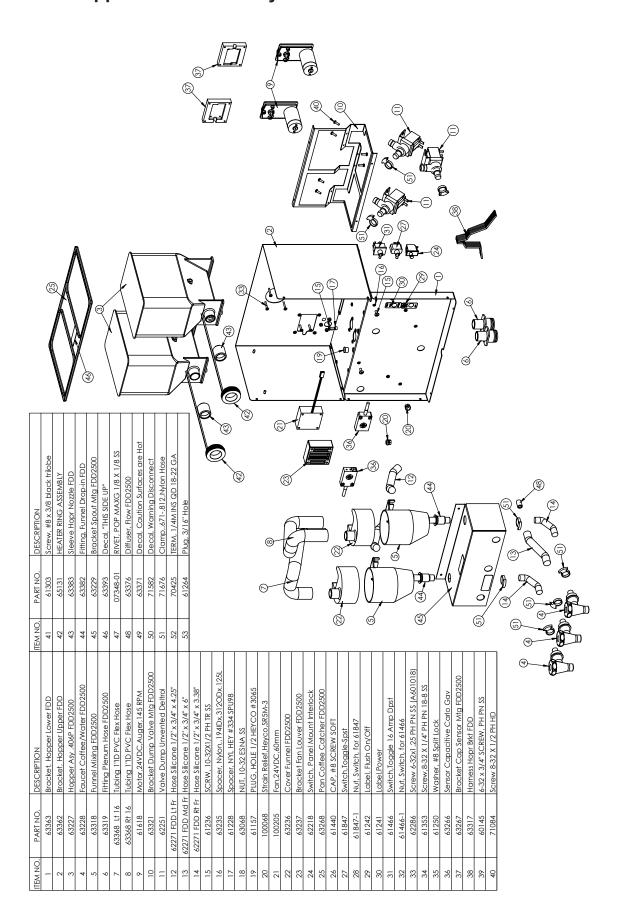


FDD2500 Splash Panel Assembly

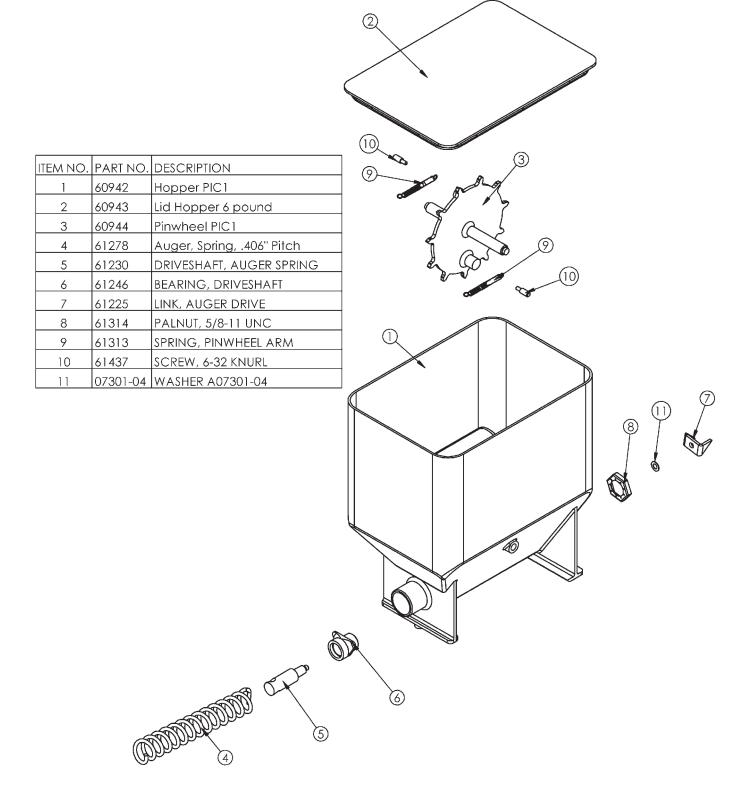


Page 18 Model FDD2500

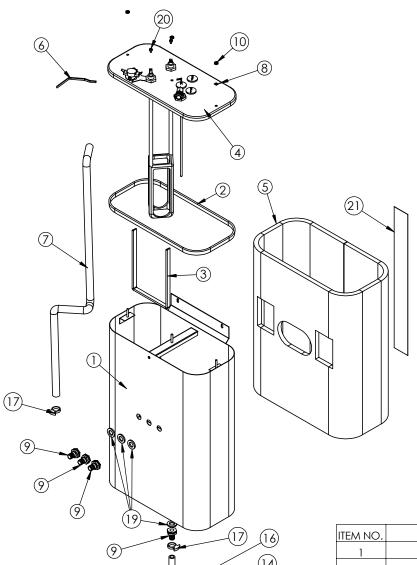
FDD2500 Hopper Shelf Assembly



FDD2500 Hopper Assembly



Page 20 Model FDD2500



18

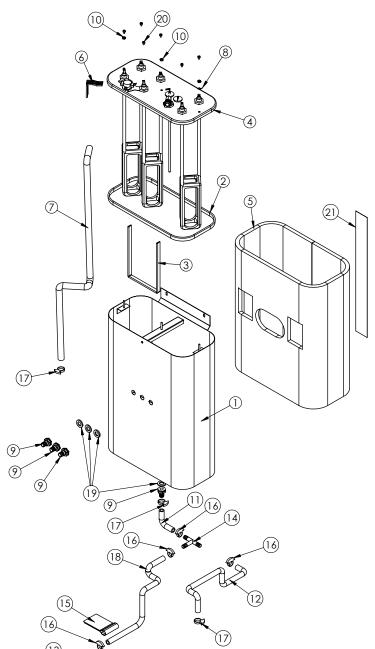
16

(15)

13)

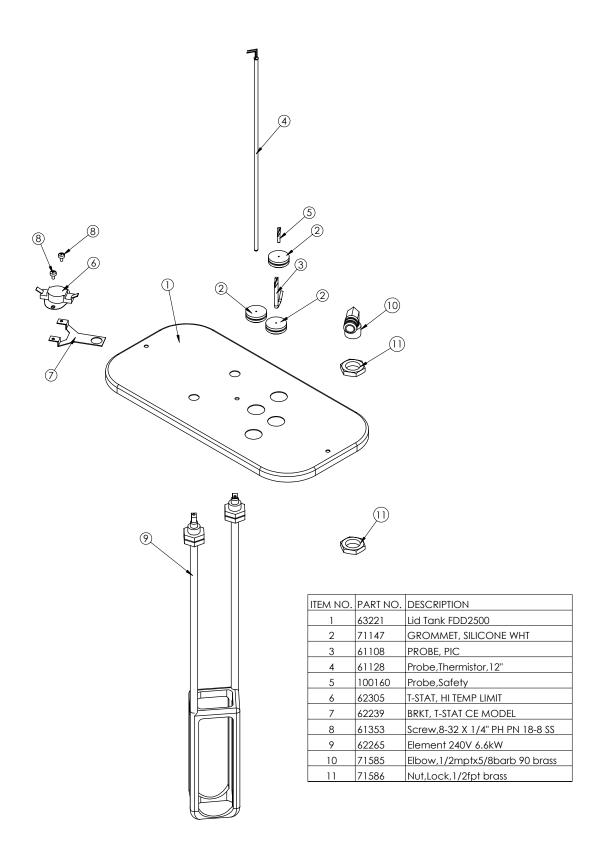
ITEM NO.	PART NO.	DESCRIPTION
1	63214	Tank Weldment FDD2500
2	63355 Tank	Gasket Tank 38"
3	63355 Baffle	Gasket Baffle 20"
4	63220	Tank Lid Asy FDD2500
5	63222	Insulation Tank FDD2500
6	63294	Harness Htr 1-Ph FDD2500
7	62271 FDD Vent	Tubing Silicone 1/2 x 3/4, 33"
8	70635	TERMINAL, 1/4-032 X 45DEG TAB
9	62269	Fitting, 1/2" Barb SS
10	63297	NUT, 10-24 ESNA SS
11	05826 FDD Short	Tubing Silicone 3/8 x 5/8 x 5"
12	05826 FDD IValve	Tubing Silicone 3/8 x 5/8 x 17"
13	61232	Plug,3/8 Barb
14	61152	Tee, 7/16" Barbed
15	63448	Decal,Tank Drain 5+ Gal
16	07327	Clamp,Hose,21/32ID,Heyco#2322
17	71676	Clamp,.671812,Nylon Hose
18	05826 FDD Drain	Tubing Silicone 3/8 x 5/8 x 25"
19	62282	Gasket, Bulkhead
20	61353	Screw,8-32 X 1/4" PH PN 18-8 SS
21	60262,18	TAPE, ALUM HI-TEMP 18.25"

FDD2500 Tank Assembly – 3 Heater, 11.1kW

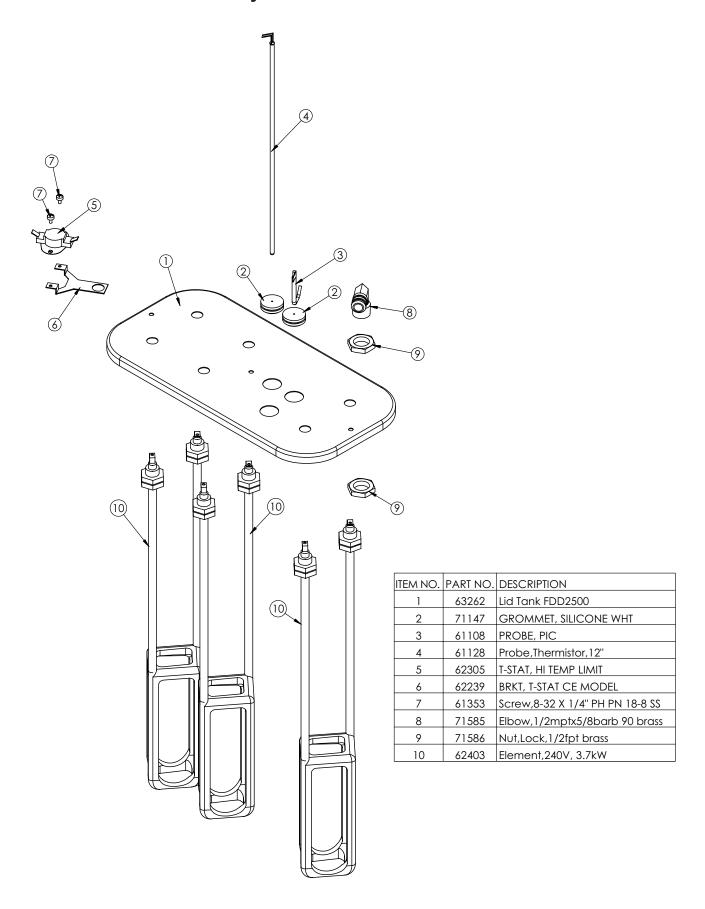


ITEM NO.	QTY.	PART NO.	DESCRIPTION		
1	1	63214	Tank Weldment FDD2500		
2	1	63355 Tank	Gasket Tank 38"		
3	1	63355 Baffle	Gasket Baffle 20"		
4	1	63261	Tank Lid Asy FDD2500		
5	1	63222	Insulation Tank FDD2500		
6	1	63295	Harness Heater 3-Ph FDD2500		
7	1	62271 FDD Vent	Tubing Silicone 1/2 x 3/4, 33"		
8	1	70635	TERMINAL, 1/4-032 X 45DEG TAB		
9	4	62269	Fitting, 1/2" Barb SS		
10	3	63297	NUT, 10-24 ESNA SS		
11	1	05826 FDD Short	Tubing Silicone 3/8 x 5/8 x 5"		
12	1	05826 FDD IValve	Tubing Silicone 3/8 x 5/8 x 17"		
13	1	61232	Plug,3/8 Barb		
14	1	61152	Tee, 7/16" Barbed		
15	1	63448	Decal,Tank Drain 5+ Gal		
16	4	07327	Clamp, Hose, 21/32ID, Heyco#2322		
17	3	71676	Clamp,.671812,Nylon Hose		
18	1	05826 FDD Drain	Tubing Silicone 3/8 x 5/8 x 25"		
19	4	62282	Gasket, Bulkhead		
20	6	61353	Screw,8-32 X 1/4" PH PN 18-8 SS		
21	1	60262,18	TAPE, ALUM HI-TEMP 18.25"		

Page 22 Model FDD2500

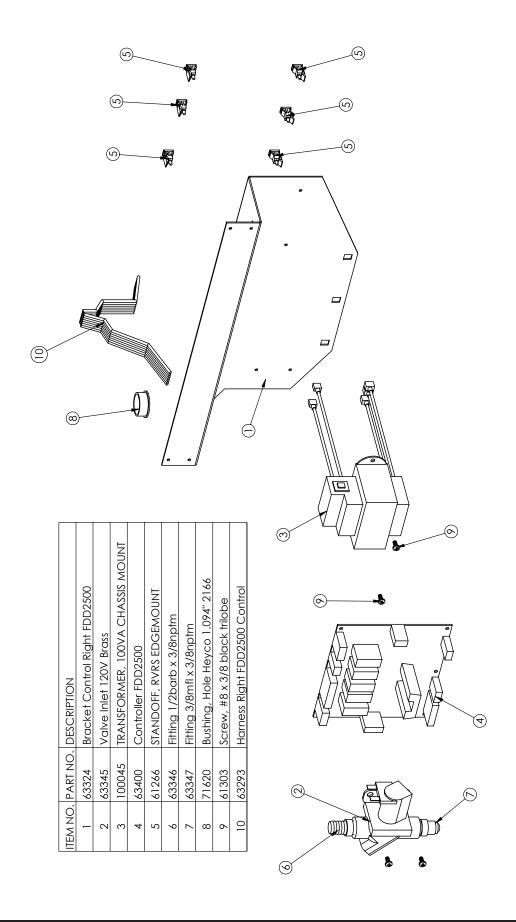


FDD2500 Tank Lid Assembly – 3 Heater

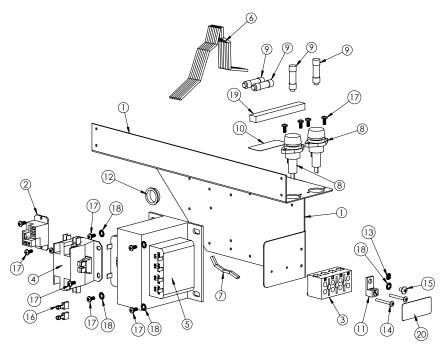


Page 24 Model FDD2500

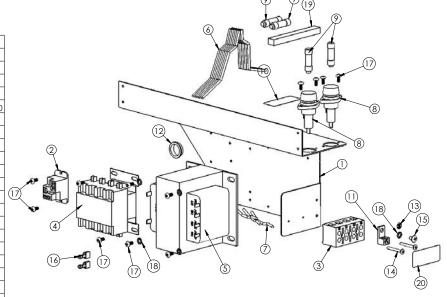
FDD2500 Control Bracket Assembly



ITEM NO.	PART NO.	DESCRIPTION
1	63329	Bracket Control Left FDD2500
2	61131	Relay,12 vdc Coil
3	62262	Terminal Block 4-pole
4	62261	Contactor DPST 30A 120V
5	63373	Transformer StepD 200VA 200/230/460-120
6	63349	Harness Left Side FDD2500
7	62457	Harness Htr LCD, FDD 1-ph
8	62332	Fuseholder, 30A 600V pnl mt
9	63395	Fuse 2 Amp Time Delay
10	63396	Decal, 2 Amp Fuse
11	07921	Lug Ground
12	60394	Bushing,Snap-7/8"OD x 3/4"
13	10073	Label, Ground Symbol
14	62286	Screw 6-32x1.25 PH PN SS (A601018)
15	60746	10-24 x 5/16" SCREW, PH PN 18-8 SS
16	70426	TERM, 1/4F INS QD 18-22 GA
17	61303	Screw, #8 x 3/8 black trilobe
18	60758	WASHER, #10 LOCK EXT SS
19	61159-4	Seal, Closed Cell Foam 4"
20	63449	Decal, Step-Down Wiring



ITEM NO.	PART NO.	DESCRIPTION		
1	63329	Bracket Control Left FDD2500		
2	61131	Relay,12 vdc Coil		
3	62262	Terminal Block 4-pole		
4	61998	Contactor 4-Pole		
5	63373	Transformer StepD 200VA 200/230/460-120		
6	63349	Harness Left Side FDD2500		
7	63350	Harness Term to Contact 3-Ph FDD		
8	62332	Fuseholder, 30A 600V pnl mt		
9	63395	Fuse 2 Amp Time Delay		
10	63396	Decal, 2 Amp Fuse		
11	07921	Lug Ground		
12	60394	Bushing,Snap-7/8"OD x 3/4"		
13	10073	Label, Ground Symbol		
14	62286	Screw 6-32x1.25 PH PN SS (A601018)		
15	60746	10-24 x 5/16" SCREW, PH PN 18-8 SS		
16	70426	TERM, 1/4F INS QD 18-22 GA		
17	61303	Screw, #8 x 3/8 black trilobe		
18	60758	WASHER, #10 LOCK EXT SS		
19	61159-4	Seal, Closed Cell Foam 4"		
20	63449	Decal, Step-Down Wiring		

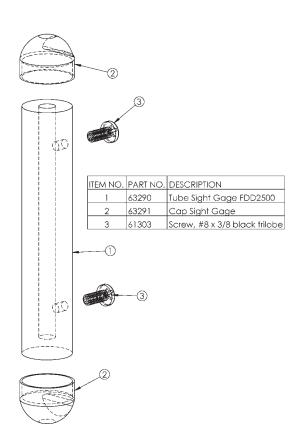


Page 26 Model FDD2500

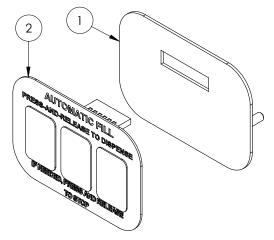
FDD2500 Switch Assembly

Item No.	Part No.	Description		
1	63285	Plate, Switch FDD2500		
2	62260	Bezel, pull switch (A1101-020)		
	62266	Handle, Pull Switch - Coffee		
3	62267	Handle, Pull Switch - Hot Water		
	62268	Handle, Pull Switch - Decaf		
4	62281	Spring, Pull Switch A522120		
5	61887	Switch, Snap Action Micro		
6	61883	Bracket, Pull Switch Activation		(11)
7	63385	Rod, Pull Switch Modified A1101-019	(12)	(11)
8	62270	Pin, Pull Switch A551-015		
9	71127	Screw 4-40 x 5/8 PH HD SS		
10	71128	Nut, 4-40 SS Hex		4
11	71261	Nut, 8-32 SS ESNA	4	\odot
12	63447	Plate Striker		

FDD2500 Sight Gauge Assembly

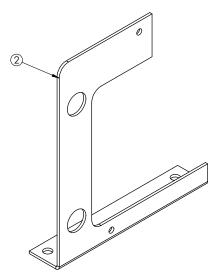


FDD2500 Touchpad Assembly

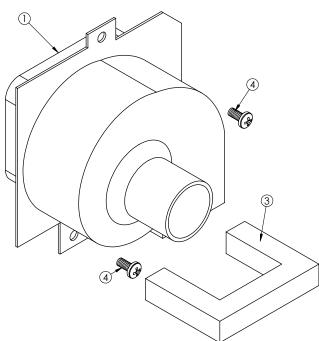


ITEM NO.	PART NO.	DESCRIPTION
1	63437	Plate, Switch FDD 3-Portion
2	63436	Touchpad 3-Port FDD2500

FDD2500 Blower Assembly

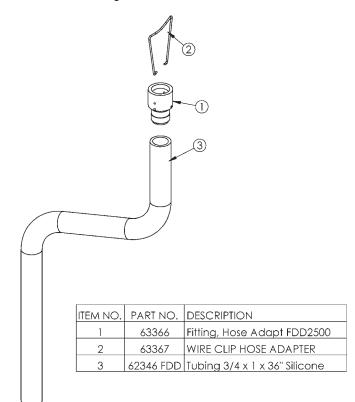


ITEM NO.	PART NO.	DESCRIPTION
1	61103	Fan, Blower 120V .25A
2	63212	Bracket Blower Mt FDD2500
3	63260	Insulation Strip Blower FDD
4	61303	Screw, #8 x 3/8 black trilobe



FDD2500 Hose Adapter Assembly #63402

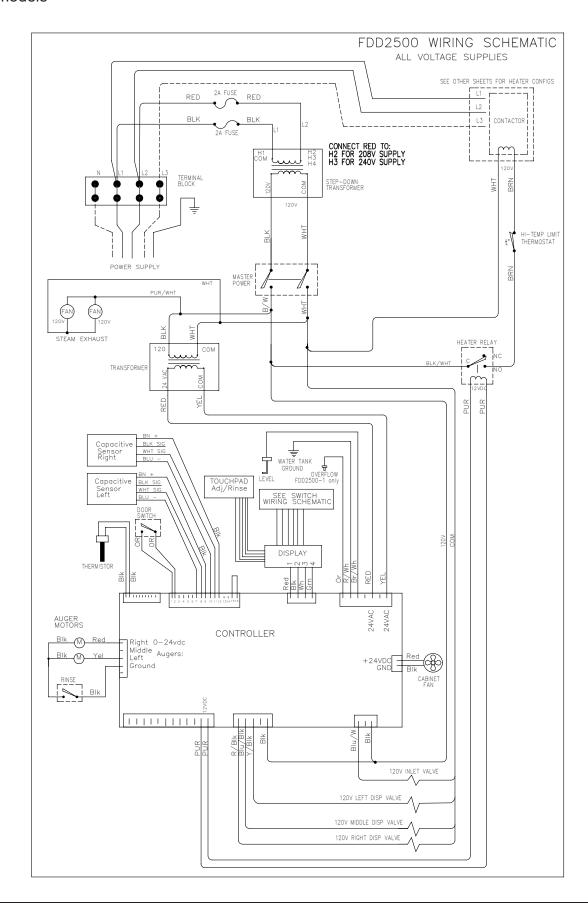
(Optional)



Page 28 Model FDD2500

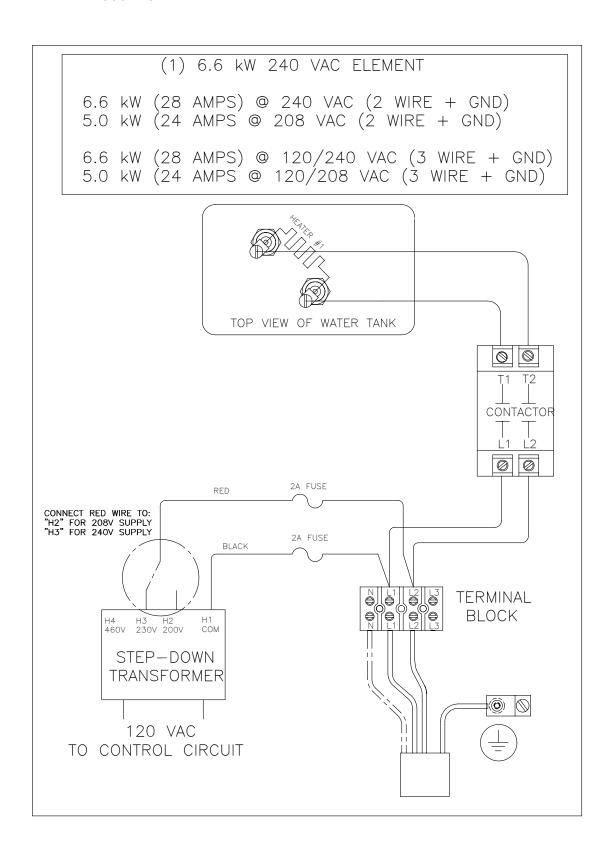
FDD2500 Wiring Schematic

for all models



1 Heater, 1 Phase, 60 Hz, 240/208 VAC Configuration

for models FDD2500-1-M-B FDD2500-1-3A-B



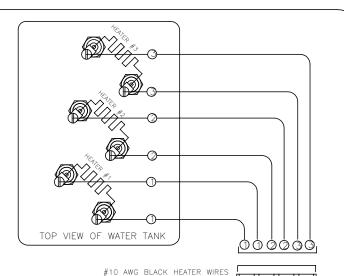
Page 30 Model FDD2500

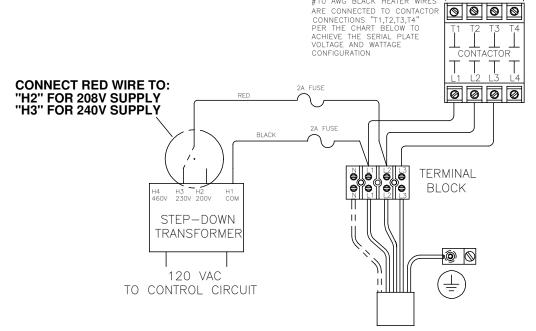
Three Heater Option Configuration Hookup Diagram

for models FDD2500-3-M-B FDD2500-3-3A-B

FDD2500-3 3-HEATER WIRING HOOK-UP

NOTE: MACHINE IS EQUIPPED WITH (3) 3.7kW 240 VAC ELEMENTS WHICH CAN BE CONFIGURED TO ACHIEVE VARIOUS WATTAGE OUTPUTS PER THE CHART BELOW DEPENDING ON POWER SOURCE AVAILABLE.

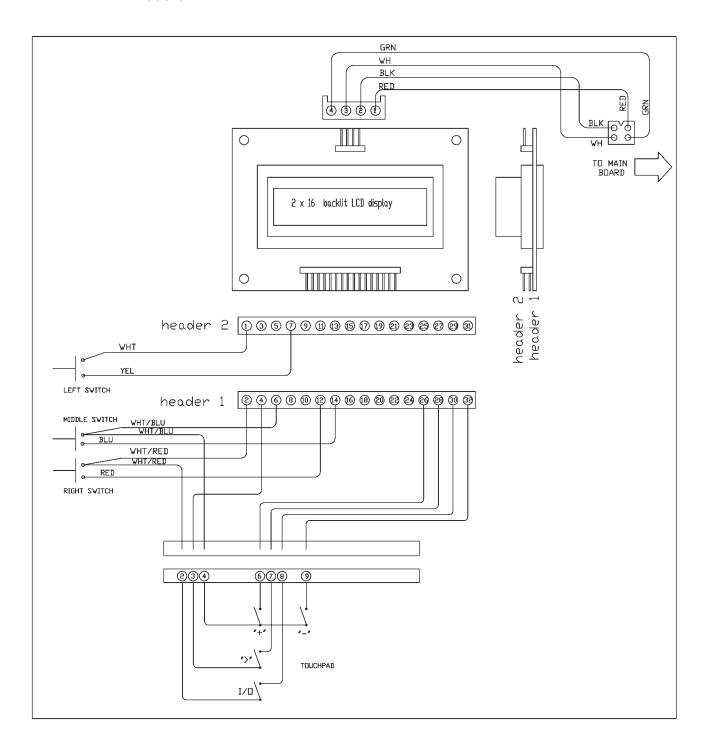




# OF ELEMENTS UTILIZED	VOLTAGE WA	WATTS	AMPS		CONNECT NUMBERED HEATER WIRES TO CONTACTOR TERMINALS PER CHART BELOW			
OTILIZED					T1	T2	Т3	T4
SINGLE PHASE								
0.5	208	1390	6.7		1	2	1,2	3,3
1	208	2780	13.4		1	1	2,2	3,3
1.5	208	4140	19.9		1,2	1,3	2,3	_
2	208	5560	26.8		1,2	1,2	3,3	-
	•		•			•		
0.5	240	1850	7.7		1	2	1,2	3,3
1	240	3700	15.5		1	1	2,2	3,3
1.5	240	5550	23		1,2	1,3	2,3	-
2	240	7400	30.9		1,2	1,2	3,3	-
THREE PHASE (DELTA CONFIGURATION)								
3	208	8340	23.2		1,2	1,3	2,3	-
3	240	11100	26.8		1,2	1,3	2,3	-

Wiring Schematic within Door

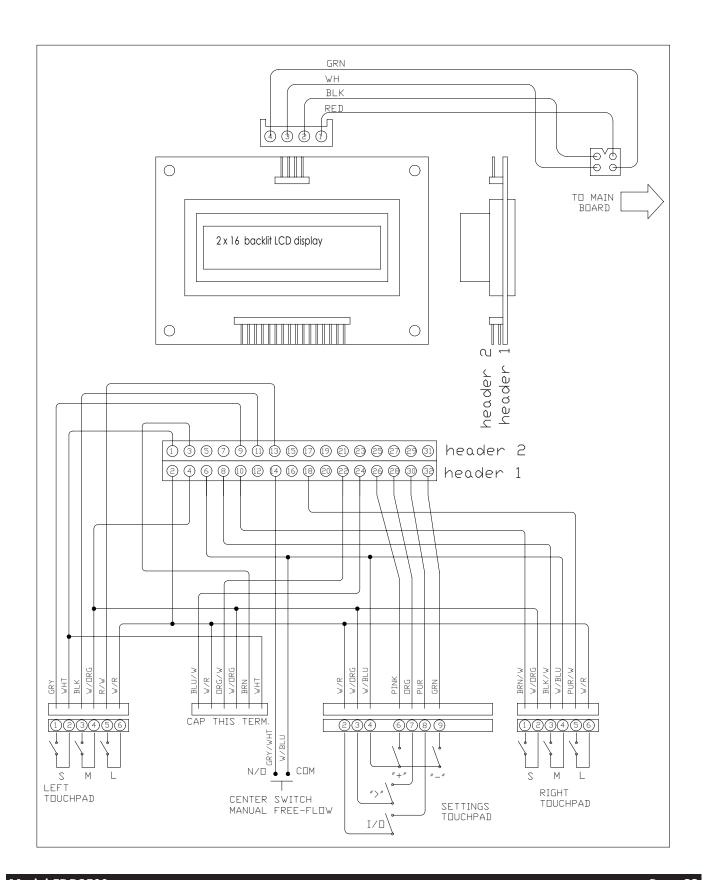
for models FDD2500-1-M-B FDD2500-3-M-B



Page 32 Model FDD2500

Wiring Schematic within Door

for models FDD2500-1-3A-B FDD2500-3-3A-B



Page 34 Model FDD2500



CORPORATION

Grindmaster® Coffee Grinders and Brewers • Espressimo® Espresso Machines • Crathco® Hot Beverage Dispensers Crathco® Cold and Frozen Beverage Dispensers • American Metal Ware® Coffee and Tea Systems Tel (502) 425-4776 • Fax (502) 425-4664 • 1-800-695-4500 P.O. Box 35020 • Louisville, KY 40232 • USA

www.grindmaster.com • email: info@grindmaster.com